

We claim:

1. An apparatus for supplying an oxygen therapeutic gas, comprising:

a cylinder for containing a pressurized oxygen therapeutic gas;

a nasal cannula, adapted to be introduced into a nasal passage of a patient;

a conduit extending between the cylinder and the nasal cannula for directing the oxygen therapeutic gas to the nasal cannula from the cylinder;

a pressure sensor, provided on the conduit, for detecting the pressure in the conduit;

a valve, provided on the conduit, for allowing and blocking the fluid communication between the cylinder and the nasal cannula;

a controller for controlling the operation of the valve in synchronization with the respiration of a patient based on the changes in the pressure detected by the pressure sensor, the volume of the oxygen therapeutic gas passing through the valve for each respiration being increased, compared with a normal respiration condition, when the respiratory frequency increases.

2. An apparatus according to claim 1, wherein the controller compares the respiratory frequency with a threshold to increase the volume of the oxygen therapeutic gas for each respiration when the respiratory frequency is larger than the threshold.

3. An apparatus according to claim 1, wherein the valve is a solenoid operated valve having a solenoid, and the controller controls the solenoid to open the valve for a time period sufficient for a volume of the oxygen therapeutic gas to flow therethrough for each respiration.

4. An apparatus according to claim 1, wherein the pressure sensor is an electric capacitor type pressure sensor having a capacitor of which the electrostatic capacitance represents the detected pressure.

5. An apparatus according to claim 1, wherein the controller determines the initiation of each respiration by monitoring the changes in the pressure detected by the pressure sensor.

5           6.    An apparatus according to claim 5, wherein the controller calculates the respiratory frequency by measuring the time interval between the initiations of sequential respirations.